

1614

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Joseph L. Duffy, et al.	
Serial No.:	10/701,186	Case No.: 21167
Filed:	November 4, 2003	
For:	CYANTHIOPHENE DERIVATIVES, COMPOSITIONS CONTAINING SUCH COMPOUNDS AND METHODS OF USE	

Commissioner for Patents  
P.O. BOX 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR § 1.97

Sir:

In compliance with 37 CFR § 1.97, Applicants and other individuals associated with the filing or prosecution of this application wish to bring to the attention of the Examiner the patents, publications, and other information of which they are aware, listed on the attached form PTO-1449, which they believe may be relevant to the examination of this application or may be material to patentability and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56. Applicants respectfully request that the Examiner initial the form PTO-1449 after reviewing the pertinence of each reference.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on the date appearing below.

MERCK & CO., INC.

By Dennis Brown Date 2-4-2004

This Information Disclosure Statement is not an admission that any patent, publication, or other information referred to herein is "prior art" for this invention.

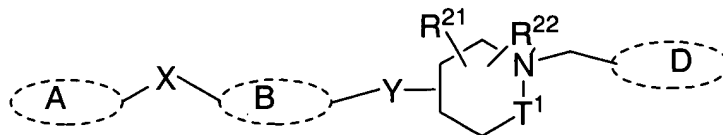
In accordance with 37 CFR § 1.97(h), the filing of this Information Disclosure Statement shall not be construed to be an admission that the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 CFR § 1.56(b). In accordance with 37 CFR § 1.97(g), the filing of this Information Disclosure Statement shall not be construed as a representation that a search has been made.

Pursuant to 37 CFR § 1.97(b), this Information Disclosure Statement is being filed within three months of the filing date of the present application.

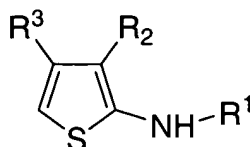
Copies of the non-U.S. patent documents that are cited on the attached form PTO-1449 are enclosed herewith.

All the references cited on the attached form are in English with the exception of the following:

WO 2002/018335 A1 dated 3/7/2002 entitled "Preparation of Cyclic Amine Derivatives as CCR3 Antagonists", relates to compounds of the general formula:

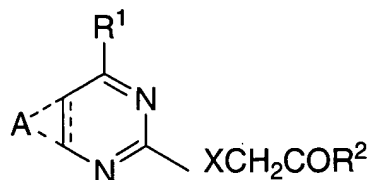


JP 2000250169 A2 dated 9/14/2000 entitled Photothermographic Image Forming Material Using Diazonium Salt Coupler relates to compounds of the formula:



The material forms a coupler for a support coated with a heat-sensitive layer. It is used in thermographic imaging.

DE 4119767 A1 dated 12/7/1992 entitled Preparation of (arenopyrimidinylthio) acetates and analogs, relates to compounds of the general formula:



In the synthesis, the compound 2-chloro-N-(3-cyano-4,5-dimethyl-2-thienyl) acetamide is disclosed.

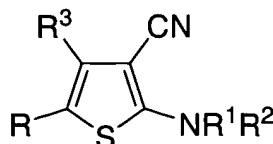
DE 3624304 A1 dated 1/28/1988, and EP 253259A2 and A3 dated 1/20/1988 and 3/22/1989, respectively, and entitled Preparation of Substituted Thienylamides and Their Use as Agrochemical Fungicides, relate to a 3-cyanothiophene used in the synthesis schemes. The compound 3-cyano-4,5 dimethyl-2-thienyl carbamic acid methyl ester is disclosed.

DE3529247 A1 dated 11/20/1986, EP 202538 A1 dated 11/26/1986 and EP202538B1 dated 12/28/1988 and entitled Thienylureas and Isoureas and Their Preparation and Use as Growth Promoters For Animals relate to the synthesis of thienylureas and isoureas. The compound N-[3-cyano-4-(1,1-dimethylethyl)-2-thienyl]-N'-phenyl urea is disclosed.

EP193885 A1 dated 9/10/1986 and entitled Thiophene Derivatives Relates to the Preparation of Dye Intermediates. The compound N-(4-chloro-3-cyano-2-thienyl) formamide is disclosed.

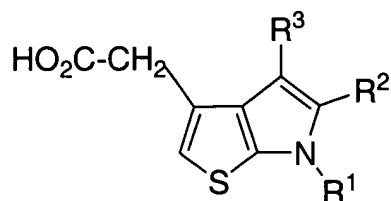
EP202538 A1 dated 11/26/1986 and entitled Productivity-Increasing Agents for Livestock relates to thiophenes, thienylureas and isoureas. The compound N-[3-cyano-4-(1,1-dimethyl)-2-thienyl]-N'-phenyl urea is disclosed.

DE3507421 A1 dated 9/10/1986 and entitled Aminocyanthiophene Azo Dye Intermediates relates to azo dye intermediates of the general formula:

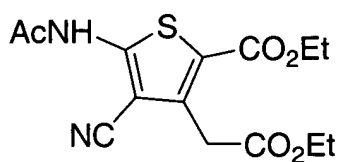


The compound N-(4-chloro-3-cyano-2-thienyl) formamide is disclosed.

FR2564467 A1 dated 11/22/1985 and entitled Thieno [2,3-b] Pyrroles relates to analgesics and anti-inflammatories of the general formula:

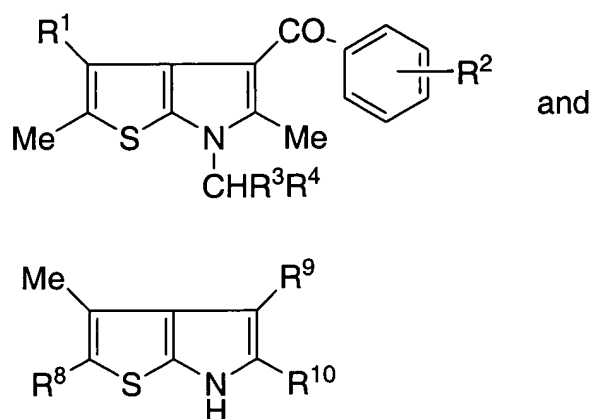


A cyanothiophene of the formula

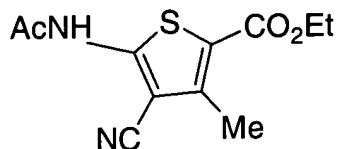


is disclosed in the synthesis.

FR2565981 A1 dated 12/20/1985 and entitled Thieno [2,3-b] Pyrroles relates to thieno pyrroles of the general formula:



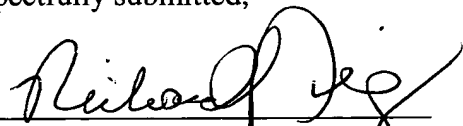
A cyanthiophene of the formula:



Thus, it is respectfully urged that the "concise explanation requirement" under 37 CFR§1.98 has been fully satisfied. If the Examiner feels that further explanation is necessary, he or she is respectfully requested to telephone the undersigned.

Any additional fees required in connection with this submission may be taken from Merck Deposit Account No. 13-2755.

Respectfully submitted,

By   
Richard C. Billups, Reg. No. 91,916  
Attorney for Applicant

MERCK & CO., Inc.  
P.O. Box 2000  
Rahway, New Jersey 07065-0907  
(732) 594-4683

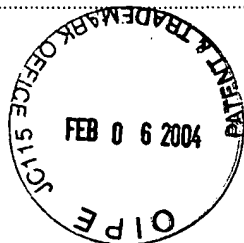
Date: February 4, 2004

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants: Joseph L. Duffy, et al.

Serial No. 10/701,186

Filed: November 4, 2003

For: CYANTHIOPHENE DERIVATIVES, COMPOSITIONS  
CONTAINING SUCH COMPOUNDS AND METHODS  
OF USE

Art Unit: \_\_\_\_\_

Examiner: \_\_\_\_\_

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR 1.97**

Sir:

1. In compliance with 37 C.F.R. 1.97, submitted on the attached form herewith is a list of patents, publications or other information which are requested to be made of record in this application. This Information Disclosure Statement is not an admission that any patent, publication or other information referred to herein is "prior art" for this invention. In accordance with 37 C.F.R. 1.97(h), the filing of this Information Disclosure Statement shall not be construed to be an admission that the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. 1.56(b).

2. In accordance with 37 C.F.R. 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made.

3. Applicants respectfully request that the Examiner initial the attached form after reviewing the pertinence of each reference.

4. Pursuant to the waiver by the Office of the requirement under 37 CFR 1.98 (a)(2)(i) dated July 11, 2003, if the filing date of this application is after June 30, 2003, copies of each cited U.S. patent and each U.S. patent application publication are not enclosed herewith.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on the date appearing below.

**MERCK & CO., INC.**By *Denise Buann* Date 2-4-2004

**INFORMATION DISCLOSURE STATEMENT**

5. Pursuant to 37 C.F.R. 1.98(d), copies of references listed on the attached form that were submitted to or cited by the Office in a related application upon which the instant application relies for an earlier filing date under 35 U.S.C. 120 are not enclosed. Related application(s) in which references were submitted to or cited by the Office are as follows:

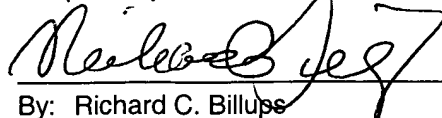
RELATED APPLICATION		
U. S. SERIAL NUMBER	FILING DATE	MERCK CASE

If this is inconvenient, additional copies will be submitted upon request.

6. In accordance with 37 C.F.R. 1.97, (check one)

- ☒ the attached information is filed within three months of the filing date of the captioned case.
- ☐ the attached information is filed more than three months after the filing date but prior to the mailing of a first Office Action on the merits.
- ☐ the attached information is being filed more than three months after the filing date and after the mailing of a first Office Action on the merits, but before the mailing date of a Final Action or Notice of Allowance. The enclosed authorization is therefore given to charge Deposit Account No. 13-2755 for the fee required under 37 C.F.R. 1.17(p).
- ☐ the undersigned certifies that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement.
- ☐ the undersigned certifies that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated under 37 C.F.R. 1.56(c) more than three months prior to the filing of this Statement.

Respectfully submitted,



By: Richard C. Billups  
Attorney \_\_\_\_\_ For Applicant(s)

Reg. No. 31,916

MERCK & CO., INC.

Patent Dept., RY60-30

P.O. Box 2000

Rahway, N.J. 07065-0907

(732)594-4683

Date: February 4, 2004

(Use as many sheets as necessary)

Sheet

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of

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**Application Number**

10/701,186

**Filing Date**

November 4, 2003

**First Named Inventor**

Joseph L. Duffy et al.

## Group Art Unit

## Examiner Name

## Attorney Docket Number

21167

[illegible]

Examiner Initials*	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Office	Number	Kind Code (if known)		
	7	PCT	WO 00/69810		NOVO NORDISK A/S & AGOURON PHARMACEUTICALS, INC.	11/23/2000
	8	PCT	WO 00/39088		NOVO NORDISK A/S & AGOURON PHARMACEUTICALS, INC.	07/06/2000
	9	PCT	WO 99/01423corrected version		NOVO NORDISK A/S & ALANEX CORPORATION	01/14/1999
	10	PCT	WO 99/01423		NOVO NORDISK A/S & ALANEX CORPORATION	01/14/1999
	11	PCT	WO 98/04528 A2		BAYER CORPORATION & BAYER AKTIENGESELLSCHAFT	02/05/1998
	12	PCT	WO 98/04528 A3		BAYER CORPORATION & BAYER AKTIENGESELLSCHAFT	02/05/1998
	13	PCT	WO 99/22108		MERCK & CO., INC.	05/28/1998
	14	PCT	WO 99/22109		MERCK & CO., INC.	05/28/1998
	15	PCT	WO 97/16442		MERCK & CO., INC.	05/09/1997
	16	PCT	WO 98/21957		MERCK & CO., INC.	05/28/1998

Examiner  
Signature

Date  
Considered

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

SEND TO: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450. Computer generated form "IDS Form" (IDS Folder), Merck & Co., Inc., 09/05/2003



**COMPLETE IF KNOWN**

<b>Application Number</b>	10/701,186
<b>Filing Date</b>	November 4, 2003
<b>First Named Inventor</b>	Joseph L. Duffy, et al.
Group Art Unit	
Examiner Name	
<b>Attorney Docket Number</b>	21167

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of

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Attorney Docket Number 21167

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Examiner Initials*	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Office	Number	Kind Code (if known)		
	17	PCT	WO 99/46267		NOVO NORDISK A/S	09/16/1999
	18	PCT	WO 99/32448		AMGEN, INC.	07/01/1999
	19	PCT	WO 99/32448 corrected version		AMGEN, INC.	07/01/1998
	20	PCT	WO 02/18335		YAMANOUCHI PHARMACEUTICAL CO., LTD.	03/07/2002
	21	PCT	WO 01/58890		ASTRAZENECA AB	08/16/2001
	22	PCT	WO 01/46165		NOVARTIS-ERFINDUNGEN VERWALTUNGSGESELLSCHAFT M.B.H.	06/28/2001
	23	PCT	WO 01/44226		PROTHERICS MOLECULAR DESIGN LIMITED	06/21/2001
	24	PCT	WO 01/40223 A2		NOVARTIS AG	06/07/2001
	25	PCT	WO 01/40223 A3		NOVARTIS AG	06/07/2001
	26	PCT	WO 01/36415		NOVARTIS AG	05/25/2001

Date  
Considered

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Group Art Unit	
Examiner Name	
<b>Attorney Docket Number</b>	21167

Sheet	3	of	5	Attorney Docket Number	21167
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Examiner Initials*	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Office	Number	Kind Code (if known)		
	27	PCT	WO 01/32632 A2		ELI LILLY AND COMPANY	05/10/2001
	28	PCT	WO 01/32632 A3		ELI LILLY AND COMPANY	05/10/2001
	29	EP	0 263 071 A1		CIBA-GEIGY AG	04/06/1988
	30	EP	0 263 071 B1		CIBA-GEIGY AG	04/06/1988
	31	EP	0 253 259 A2		BAYER AG	01/20/1988
	32	EP	0 253 259 A3		BAYER AG	01/20/1988
	33	EP	0 193 885 A1		BASF	09/10/1986
	34	EP	0 193 885 B1		BASF	09/10/1986
	35	EP	0 202 538 A1		BAYER AG	11/26/1986
	36	EP	0 202 538 B1		BAYER AG	11/26/1986

Date  
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Attorney Docket Number 21167

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Examiner Initials*	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Office	Number	Kind Code (if known)		
	37	EP	0 217 748 A2		CIBA-GEIGY	04/08/1987
	38	EP	0 217 748 B1		CIBA-GEIGY	04/08/1987
	39	FR	2 565 981		ADIR	12/20/1985
	40	FR	2 564 467		ADIR	11/22/1985
	41	DE	35 29 247 A1		BAYER AG	11/20/1986
	42	DE	36 24 304 A1		BAYER AG	01/28/1986
	43	DE	41 19 767 A1		ARZNEIMITTELWERK DRESDEN GmbH	02/15/2002
	44	DE	35 07 421 A1		BASF AG	09/04/1986
	45	JP	2002-50169		FUJI PHOTO FILM CO., LTD.	02/15/2002

Date  
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Substitute for form 1449B/PTO

# INFORMATION DISCLOSURE

## STATEMENT BY APPLICANT

(use as many sheets as necessary)

### COMPLETE IF KNOWN

Application Number	10/701,186
Filing Date	November 4, 2003
First Named Inventor	Joseph L. Duffy et al.
Group Art Unit	
Examiner Name	
Attorney Docket Number	21167

Sheet	5	of	5
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### NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author, title, date, page(s), volume-issue number(s) and place of publication.
	46	Guillon, Jean, et al., "Synthesis of new pyrrolo[1,2-a]quinoxalines: potential non-peptide glucagon receptor antagonist", <i>Eur. J. Med. Chem.</i> , 33, pp. 293-308 (1998)
	47	Petersen, K. F., et al., "Effects of a novel glucagon receptor antagonist (Bay 27-9955) on glucagon-stimulated glucose production in humans", <i>Diabetologia</i> , 44, pp. 2018-2024 (2001)
	48	Ladouceur, Gaetan, H., et al., "Discovery of 5-Hydroxyalkyl-4-phenylpyridines as a New Class of Glucagon Receptor Antagonists", <i>Bioorganic &amp; Medicinal Chemistry Letters</i> , 12, pp. 461-464 (2002)
	49	Cascieri, Margaret, A., "Characterization of a Novel, Non-peptidyl Antagonist of the Human Glucagon Receptor", <i>The Journal of Biological Chemistry</i> , Vol. 274, Issue of March 26, pp. 8694-8697 (1999)
	50	de Laszlo, Stephen, E., "Potent, Orally Absorbed Glucagon Receptor Antagonists", <i>Bioorganic &amp; Medicinal Chemistry Letters</i> , 9, pp. 641-646 (1999)
	51	Madsen, Peter, et al., "Discovery and Structure-Activity Relationship of the First Non-Peptide Competitive Human glucagon Receptor Antagonists", <i>J. Med Chem.</i> , 41, pp. 5150-5157 (1998)
	52	Ling, Anthony, et al., "Identification of Alkylidene Hydrazides as Glucagon Receptor Antagonists", <i>J. Med. Chem.</i> , 44, pp. 3141-3149 (2001)
	53	Ling, Anthony, et al., "Human Glucagon Receptor Antagonists Based on Alkylidene Hydrazides", <i>Bioorganic &amp; Medicinal Chemistry Letters</i> , 12, pp. 663-666 (2002)
	54	Collins, Judith, L., "CP-99,711: A Non-Peptide Glucagon Receptor Antagonist", <i>Bioorganic &amp; Medicinal Chemistry Letters</i> , Vol. 2, No. 9, pp. 915-918 (1992)
	55	Parker, Janice, C., "Effects of Skyrin, a Receptor-Selective Glucagon Antagonist, in Rat and human Hepatocytes", <i>Diabetes</i> , Vol. 49, pp. 2079-2086 (December 2000)
	56	Connell, Richard, D., "Glucagon antagonists for the treatment of Type 2 diabetes", <i>Expert Opinion on Therapeutic patents</i> , 9(6), pp. 701-709 (1999)
	57	Madsen, P., et al., "Advances in Non-Peptide Glucagon Receptor Antagonists", <i>Current Pharmaceutical Design</i> , 5, pp. 683-691 (1999)

Examiner Signature

Date Considered

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